

Name \_\_\_\_\_

Date \_\_\_\_\_



## Practice and Applications

For use after Sections 1–4

### For use with Section 1

1. Write  $4^6 \cdot 4^9$  and  $\frac{x^{10}}{x^4}$  as single powers.

Write each product or quotient as a single power.

2.  $(t^8)(t^7)$

3.  $(5g^2)(g^{-1})$

4.  $(3x^8)(6x^5)$

5.  $\frac{b^8}{b^7}$

6.  $(20t^{25})(t^{-3})$

7.  $\frac{5y^9}{15y^7}$

Write each expression without using zero or negative exponents.

8.  $5x^{-2}$

9.  $g^{-3}$

10.  $p^0$

11.  $3f^{-17}$

12.  $w^{-8}$

13.  $2a^{-9}$

Write each number in scientific notation.

14. 0.0078

15. 0.0000000045

16. 0.0000867

17. 0.00246981

18. 0.9

19. 0.00131

### For use with Section 2

Tell whether each number is *rational* or *irrational*.

20.  $\frac{24}{5}$

21.  $34.\overline{12}$

22.  $\sqrt{121}$

23.  $\sqrt{11}$

24.  $-8.\overline{6}$

25.  $\sqrt{13}$

Simplify each expression. Assume all variables represent positive numbers.

26.  $\sqrt{98}$

27.  $\sqrt{3600}$

28.  $\sqrt{\frac{4}{25}}$

29.  $\sqrt{\frac{10}{16}}$

30.  $\frac{8}{\sqrt{3}}$

31.  $\frac{1}{\sqrt{2}}$

32.  $\sqrt{49b^7}$

33.  $\sqrt{x^2y^9}$

34.  $\sqrt[3]{64}$

35.  $\sqrt[3]{g^3h^6i^8}$

36.  $\sqrt[4]{81}$

37.  $\sqrt[4]{x^7y^{11}}$

(continued)

Name \_\_\_\_\_

Date \_\_\_\_\_



## Practice and Applications

*For use after Sections 1–4*

### For use with Section 3

**Graph each inequality on a number line.**

38.  $x \geq 3$

39.  $b < 6$

40.  $j \leq -2$

41.  $t > 0$

**Solve each inequality. Check and graph each solution.**

42.  $3 + x \leq 4$

43.  $y - 5 > 7$

44.  $-1.5b < 20$

45.  $18 - 5m > -7$

46.  $2.5t + 3.1 \geq 5.6$

47.  $-9r + \frac{1}{2} > 5$

**Write and solve an inequality for each situation.**

48. Twelve less than three times a number is more than three.

49. Seven plus twice a number is less than fifteen.

50. You will spend at least \$25 if you buy a CD for \$15 and two used books. How much does one used book cost?

### For use with Section 4

**Use algebra tiles to find the product of the binomials.**

51.  $(x + 7)(x + 1)$

52.  $(x - 1)(2x + 5)$

53.  $(x - 6)(x + 2)$

**Use a table to find the product of the binomials. Show your work.**

54.  $(6x - 1)(2x + 1)$

55.  $(x + 7)(x - 7)$

56.  $(4x + 3)(x + 8)$

**Use the distributive property to find the product of the binomials.**

57.  $(4x - 1)(x + 2)$

58.  $(9 - 2x)(1 + x)$

59.  $(5x + 3)(2x - 1)$

**Use algebra tiles to factor the quadratic. Multiply the factors to check your answer.**

60.  $x^2 + 8x - 9$

61.  $x^2 + x - 6$

62.  $x^2 - x - 20$

63.  $x^2 + 4x - 12$

64.  $x^2 - x - 2$

65.  $x^2 + 2x - 15$